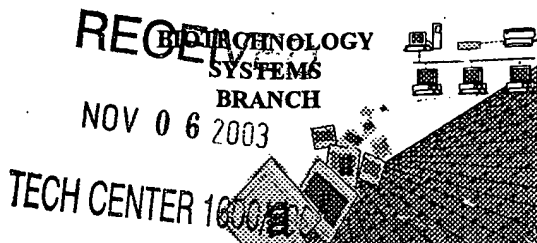


RAW SEQUENCE LISTING **ERROR REPORT**



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/804,481A

Source: 1600

Date Processed by STIC: 11/3/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT

MARK SPENCER, TELEPHONE: 703-308-4212; FAX: 703-308-4221

Effective 12/13/03: TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.1 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chkr41note.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to (EFFECTIVE 12/01/03):
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 10/08/03



1600

RAW SEQUENCE LISTING

DATE: 11/04/2003

PATENT APPLICATION: US/09/804,481A

TIME: 13:57:42

Input Set : N:\Crf4\11032003\I804481A.raw

Output Set: N:\CRF4\11042003\I804481A.raw

1 <110> APPLICANT: de Graaf, David
 2 Lander, Eric S.
 3 <120> TITLE OF INVENTION: Novel Small Nuclear RNA Vectors and Uses
 4 Therefor
 5 <130> FILE REFERENCE: 2825.1023-001
 C--> 6 <140> CURRENT APPLICATION NUMBER: US/09/804,481A
 C--> 7 <141> CURRENT FILING DATE: 2001-03-12
 8 <150> PRIOR APPLICATION NUMBER: 60/188,304
 9 <151> PRIOR FILING DATE: 2000-03-10
 10 <160> NUMBER OF SEQ ID NOS: 11
 11 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 13 <210> SEQ ID NO: 1
 14 <211> LENGTH: 4639
 15 <212> TYPE: DNA
 16 <213> ORGANISM: Homo sapiens
 17 <400> SEQUENCE: 1
 18 gacggatcgg gagatctccc gatccccctat ggtcgactct cagtacaatc tgctctgatg 60
 19 ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg 120
 20 cgagcaaaaat ttaagctaca acaaggcaag gcttgaccga caattgagct cggtagcccg 180
 21 ggagatccgg taaggaccag cttctttggg agagaacaga cgcaggggag ggagggaaaa 240
 22 agggagaggg agacgtcact tccccttggc ggctctggca gcagattggt cggttgagtg 300
 23 gcagaaaggc agacggggac tgggcaaggc actgtcggtg acatcacgga cagggcgact 360
 24 tctatgtaga tgaggcagcg cagaggctgc tgcttcgcca cttgctgctt caccacgaag 420
 25 gagttcccggt gccctgggag cgggttcagg accgctgacg ggaagtgaga atcccagctg 480
 26 tgtgtcaggg ctggaaaggg ctcgggagtg cgcggggcaa gtgaccgtgt gtgtaaagag 540
 27 tgaggcgtat gaggtgtgt cggggcagag gcccaagatc tcaagggccc ataacatgtg 600
 28 taccatcgat tgcaggggag ataccatgat cacgaagggt gttttccag ggcgaggctt 660
 29 atccattgca ctccggatgt gctgacccct gcgatttccc caaagcttgg aaactcgact 720
 30 gcataatttg tggtagtggt ggactgcgtt cgcgctttcc cctgactttc tggagtttca 780
 31 aaagtagact gtacgctaac cggatcctct agagtcgacc tgcaggcatg cagaagacaa 840
 32 ttagcaggca tgctgggat gcggtgggt ctatggcttc tgaggcggaa agaaccagct 900
 33 ggggtctag ggggtatccc cagcgccct gtagcggcgc attagcgcg gcggtgtgtg 960
 34 tggttacgcg cagcgtgacc gctacaattg ccagcgccct agcggccgct cctttcgctt 1020
 35 tcttcccttc ctttctcgcc acgttcgccc gctttccccc tcaagctcta aatcggggca 1080
 36 tccctttagg gttccgattt agtgctttac ggcaacctga ccccaaaaaa cttgattagg 1140
 37 gtgatgggtt acgtagtggt ccatcgccct gatagacggt ttttcgccc ttgacgttgg 1200
 38 agtccacgtt ctttaatatg ggactcttgt tccaaactgg aacaacactc aaccctatct 1260
 39 cgggtctattc ttttgattta taagggattt tggggatttc ggcctatttg ttaaaaaatg 1320
 40 agctgattta acaaaaattt aacgcgaatt aattctgttg aatgtgtgtc agttagggtg 1380
 41 tggaaagtcc ccaggctccc caggcaggca gaagtatgca aagcatgcat ctcaattagt 1440
 42 cagcaaccag gtgtggaaag tccccaggct cccagcaggc cagaagtatg caaagcatgc 1500
 43 atctcaatta gtcagcaacc atagtccgc ccctaactcc gcccatcccg cccctaactc 1560
 44 cgcccagttc cgccattct ccgcccctg gctgactaat tttttttatt tatgcagagg 1620

Does Not Comply
Corrected Diskette Needed

P.3

RAW SEQUENCE LISTING

DATE: 11/04/2003

PATENT APPLICATION: US/09/804,481A

TIME: 13:57:42

Input Set : N:\Crf4\11032003\I804481A.raw

Output Set: N:\CRF4\11042003\I804481A.raw

```

45      ccgaggccgc ctctgcctct gagctattcc agaagtagtg aggaggcttt tttggaggcc 1680
46      taggcttttg caaaaagctc ccgggagctt gtatatccat ttccggatct gatcagcacg 1740
47      tgttgacaat taatcatcgg catagtatat cggcatagta taatacgaca aggtgaggaa 1800
48      ctaaaccatg gccaagttga ccagtgcctt tccgggtgctc accgcgcgcg acgtcgccgg 1860
49      agcggtcgag ttctggaccg accggctcgg gttctcccgg gacttcgtgg aggacgactt 1920
50      cgccggtgtg gtccgggacg acgtgaccct gttcatcagc gcggtccagg accagggtgt 1980
51      gccggacaac accctggcct ggggtgtgggt gcgcggcctg gacgagctgt acgccgagtg 2040
52      gtccggaggtc gtgtccacga acttccggga cgctccggg ccggccatga ccgagatcgg 2100
53      cgagcagccg tgggggcccgg agttcgccct gcgcgacccg gccggcaact gcgtgcactt 2160
54      cgtggccgag gagcaggact gacacgtgct acgagatttc gattccaccg ccgccttcta 2220
55      tgaaagggtt ggcttcggaa tcgttttccg ggacgcgggc tggatgatcc tccagcgcgg 2280
56      ggatctcatg ctggagttct tcgcccaccc caacttgttt attgcagctt ataattggtt 2340
57      caaataaagc aatagcatca caaatttcac aaataaagca tttttttcac tgcattctag 2400
58      ttgtggtttg tccaaactca tcaatgtatc ttatcatgtc tgtataccgt cgacctctag 2460
59      ctagagcttg gcgtaatcat ggtcatagct gtttctctgt tgaaattggt atccgctcac 2520
60      aattccacac aacatacgag ccggaagcat aaagtgtaaa gcctgggggt cctaataagt 2580
61      gagctaactc acattaattg cgttgcgctc actgcccgtt tccagtcgg gaaacctgtc 2640
62      gtgccagctg cattaatgaa tcggccaacg gcgcggggaga ggcggtttgc gtattgggcg 2700
63      ctcttccgct tcctcgctca ctgactcgct gcgctcggtc gttcggctgc ggcgagcgg 2760
64      atcagctcac tcaaaggcgg taatacgggt atccacagaa tcaggggata acgcaggaaa 2820
65      gaacatgtga gcaaaaggcc agcaaaaggc caggaaccgt aaaaaggccg cgttgctggc 2880
66      gtttttccat aggtccgcc cccctgacga gcatcaciaa aatcgacgct caagtacag 2940
67      gtggcgaaac ccgacaggac tataaagata ccaggcggtt cccctggaa gtcctctcgt 3000
68      gcgctctcct gttccgacct tgccgcttac cggataacct tccgccttcc tcccttcggg 3060
69      aagcgtggcg ctttctcaat gctcacgctg taggtatctc agttcggtgt aggtcggtcg 3120
70      ctccaagctg ggctgtgtgc acgaaccccc cgttcagccc gaccgctgcg ccttatccgg 3180
71      taactatcgt cttgagtcca acccggttaag acacgactta tcgccactgg cagcagccac 3240
72      tggtaacagg attagcagag cgaggatagt aggcggtgct acagagttct tgaagtgtg 3300
73      gcctaactac ggctacacta gaaggacagt atttggtatc tgcgctctgc tgaagccagt 3360
74      taccttcgga aaaagagttg gtagctcttg atccggcaaa caaaccaccg ctggtagcgg 3420
75      tggttttttt gtttgcaagc agcagattac gcgcagaaaa aaaggatctc aagaagatcc 3480
76      tttgatcttt tctacggggt ctgacgctca gtggaacgaa aactcacgtt aagggatttt 3540
77      ggtcatgaga ttatcaaaaa ggatcttcac ctagatcctt taaattaaa aatgaagttt 3600
78      taaatcaatc taaagtatat atgagtaaac ttggtctgac agttaccaat gcttaatacag 3660
79      tgaggcacct atctcagcga tctgtctatt tcgttcatcc atagttgcct gactccccgt 3720
80      cgtgtagata actacgatac gggagggtct accatctggc ccagtgctg caatgatacc 3780
81      gcgagaccca cgctcaccgg ctccagattt atcagcaata aaccagccag ccggaagggc 3840
82      cgagcgcaga agtggtcctg caactttatc cgctccatc cagtctatta attgttgccg 3900
83      ggaagctaga gtaagtagtt cgccagttaa tagtttgccg aacgttggtt ccattgctac 3960
84      aggcacgtg gtgtcacgct cgctggttg tatggttca ttcagctccg gttcccaacg 4020
85      atcaaggcga gttacatgat cccccatgtt gtgcaaaaaa gcggttagct ccttcgggtc 4080
86      tccgatcggt gtcagaagta agttggcgc agtggtatca ctcatggtta tggcagcact 4140
87      gcataattct cttactgtca tgccatccgt aagatgcttt tctgtgactg gtgagtactc 4200
88      aaccaagtca ttctgagaat agtgatgctg gcgaccgagt tgctcttgcc cggcgtcaat 4260
89      acgggataat accgcgccac atagcagaac tttaaaagtg ctcatcattg gaaaacgttc 4320
90      ttccggggcg aaactctcaa ggatcttacc gctgttgaga tccagttcga tgaacccac 4380
91      tcgtgcacc aactgatctt cagcatcttt tactttcacc agcgtttctg ggtgagcaaa 4440
92      aacaggaagg caaatgccg caaaaaaggg aataaggcg acacggaaat gttgaatact 4500
93      catactcttc ctttttcaat attattgaag catttatcag ggttattgtc tcatgagcgg 4560

```

RAW SEQUENCE LISTING

DATE: 11/04/2003

PATENT APPLICATION: US/09/804,481A

TIME: 13:57:42

Input Set : N:\Crf4\11032003\I804481A.raw

Output Set: N:\CRF4\11042003\I804481A.raw

```

94      atacatatatt gaatgtattt agaaaaataa acaaataggg gttccgcgca catttccccg 4620
95      aaaagtgccca cctgacgtc                                     4639
97 <210> SEQ ID NO: 2
98 <211> LENGTH: 5
99 <212> TYPE: DNA
100 <213> ORGANISM: Artificial Sequence
101 <220> FEATURE:
102 <223> OTHER INFORMATION: single-stranded restriction fragment overhand
103 <400> SEQUENCE: 2
104      gcagg                                                     5
106 <210> SEQ ID NO: 3
107 <211> LENGTH: 5
108 <212> TYPE: DNA
109 <213> ORGANISM: Artificial Sequence
110 <220> FEATURE:
111 <223> OTHER INFORMATION: single-stranded restriction fragment overhang
112 <400> SEQUENCE: 3
113      tgaga                                                     5
115 <210> SEQ ID NO: 4
116 <211> LENGTH: 33
117 <212> TYPE: DNA
118 <213> ORGANISM: Artificial Sequence
119 <220> FEATURE:
120 <223> OTHER INFORMATION: recognition site
121 <220> FEATURE:
122 <221> NAME/KEY: misc_feature
123 <222> LOCATION: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16, 22, 23, 24,
124      25, 26, 27, 28, 29, 30, 31, 32, 33
125 <223> OTHER INFORMATION: n = A,T,C or G
126 <400> SEQUENCE: 4
W--> 127      nnnnnnnnnn acnnnnngtay cnnnnnnnnnn nnn                      33
129 <210> SEQ ID NO: 5
130 <211> LENGTH: 33
131 <212> TYPE: DNA
132 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: recognition site
135 <220> FEATURE:
136 <221> NAME/KEY: misc_feature
137 <222> LOCATION: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 19, 18.
138      20, 21, 27, 28, 29, 30, 31, 32, 33
139 <223> OTHER INFORMATION: n = A,T,C or G
140 <400> SEQUENCE: 5
W--> 141      nnnnnnnnggc acnnnnngnn nnnnnnnnnnn nnn                      33
143 <210> SEQ ID NO: 6
144 <211> LENGTH: 10
145 <212> TYPE: DNA
146 <213> ORGANISM: Artificial Sequence
147 <220> FEATURE:

```

Handwritten notes:
 No "n"s at these locations (see below)
 "D" is at location 18.
 22 (see below)
 23, 24, 25, 26
 16, there is an "n"
 n's are at these locations

RAW SEQUENCE LISTING

DATE: 11/04/2003

PATENT APPLICATION: US/09/804,481A

TIME: 13:57:42

Input Set : N:\Crf4\11032003\I804481A.raw

Output Set: N:\CRF4\11042003\I804481A.raw

```

148 <223> OTHER INFORMATION: modification fragment
149 <400> SEQUENCE: 6
150     cacaaacaca                                     10
152 <210> SEQ ID NO: 7
153 <211> LENGTH: 12
154 <212> TYPE: DNA
155 <213> ORGANISM: Artificial Sequence
156 <220> FEATURE:
157 <223> OTHER INFORMATION: modification fragment
158 <400> SEQUENCE: 7
159     tccacaaaca ca                                   12
161 <210> SEQ ID NO: 8
162 <211> LENGTH: 15
163 <212> TYPE: DNA
164 <213> ORGANISM: Artificial Sequence
165 <220> FEATURE:
166 <223> OTHER INFORMATION: modification fragment
167 <400> SEQUENCE: 8
168     tcgtccacaa acaca                               15
170 <210> SEQ ID NO: 9
171 <211> LENGTH: 12
172 <212> TYPE: DNA
173 <213> ORGANISM: Artificial Sequence
174 <220> FEATURE:
175 <223> OTHER INFORMATION: modification fragment
176 <400> SEQUENCE: 9
177     cacaaacaca ac                                   12
179 <210> SEQ ID NO: 10
180 <211> LENGTH: 10
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
183 <220> FEATURE:
184 <223> OTHER INFORMATION: modification fragment
185 <400> SEQUENCE: 10
186     cacaaacacg                                     10
188 <210> SEQ ID NO: 11
189 <211> LENGTH: 59
190 <212> TYPE: DNA
191 <213> ORGANISM: Artificial Sequence
192 <220> FEATURE:
193 <223> OTHER INFORMATION: vector construct
194 <400> SEQUENCE: 11
195     ggcccaagat ctcaagggcc cataacatgt gtaccatcga ttgcagggga gataccatg 59

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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/04/2003
PATENT APPLICATION: US/09/804,481A TIME: 13:57:43

Input Set : N:\Crf4\11032003\I804481A.raw
Output Set: N:\CRF4\11042003\I804481A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:4; N Pos. 1,2,3,4,5,6,7,8,9,10,13,14,15,16,22,23,24,25,26,27,28,29,30

Seq#:4; N Pos. 31,32,33

Seq#:5; N Pos. 1,2,3,4,5,6,7,13,14,15,16,19,20,21,22,23,24,25,26,27,28,29

Seq#:5; N Pos. 30,31,32,33

VERIFICATION SUMMARY

DATE: 11/04/2003

PATENT APPLICATION: US/09/804,481A

TIME: 13:57:43

Input Set : N:\Crf4\11032003\I804481A.raw

Output Set: N:\CRF4\11042003\I804481A.raw

L:6 M:270 C: Current Application Number differs, Wrong Format
L:7 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:127 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0